Abstracts

Impedance Calculation for the Microshield Line

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The microshield line, a new type of monolithic planar transmission line, is investigated analytically, highlighting its features with respect to other conventional planar lines. The characteristic impedance of the new line is obtained using two different techniques: the computationally intensive point matching method (PMM) and the analytical conformal mapping method (CMM). In the latter method, a CAD-oriented analytical expression, in terms of all finite line dimensions, is obtained using conformal mapping techniques. It is shown that the results of both methods agree very well which verifies both analyses. In addition, the effect of finite-extent ground planes on the characteristic impedance is demonstrated.

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